PCI Hot Plug User Guide for Microsoft® Windows® Server 2003

March 2004 (Second Edition)
Part Number 357858-002

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Contents

Introduction **5**
Overview 5
Setup 5

Hot-Plug Addition **6**
Hardware Interface 6
Hardware Interface for the HP Integrity Superdome 6
Software Interface 7

Hot-Plug Deletion **8**
Hardware Interface 8
Hardware Interface for the HP Integrity Superdome 8
Software Interface 9
Software Interface for the HP Integrity Superdome 9
Trouble shooting tips 9

Introduction

This document discusses how to perform a hot plug operation on an HP Integrity server with Microsoft® Windows® Server 2003.

Overview

- **Attention button**

  The attention button allows the user to initiate a hot-plug operation. The HP Integrity rx8620/rx7620 has white (bell image) buttons located at the top rear of the PCI slot. To access, remove the button cover. The HP Integrity rx4640 has maroon colored buttons on the top of the PCI slot separator. The HP Integrity Superdome server does not have attention buttons.

- **MRL latch**

  The MRL sensor is activated by the manual retention latch (MRL). When the MRL is open, the power is turned off to the slot to prevent electrical damage to the card and the system. The HP Integrity rx8620/rx7620 has a blue lever at the top rear of the PCI slot . The HP Integrity rx4640 has a black lever at the rear of the PCI slot and a black latch at the rear of the PCI slot separator. The HP Integrity Superdome server does not have MRL latches.

- **Power indicator**

  The HP Integrity Superdome and rx8620/7620 requires the latest version of the OpRegion driver, 1.1.0.0 dated 6/5/03 installed.

Setup

1. The HP Integrity rx8620/7620 requires the latest version of the OpRegion driver, 1.1 dated 6/13/03 installed.
2. In the HP Integrity rx4640 server slots 2-3 and 4-5 are shared PCI hot plug slots. For optimal hot plug operation, the same type of PCI cards should be used in shared slots. For example, if a PCI-X 133MHZ card is in slot 4, the insertion of a PCI-66MHZ card in slot 5 will fail. If a PCI-66MHZ card is in slot 3, the insertion of a PCI-X 133MHZ in slot 2 will be successful.
3. Ensure that the server has the latest version of the system firmware.
4. Ensure Microsoft Windows Server 2003, Enterprise Edition or Datacenter Edition is installed.

Hot-Plug Addition

This section describes how to perform a hot-plug addition on an HP Integrity Server with Windows Server 2003.

Hardware Interface

1. Locate an empty slot.
2. If the power light is on for the slot, press the attention button to start the power down sequence. (If the power light is not on, you do not need to press the attention button). The power LED will blink for 5 seconds. While the power LED is flashing, you may cancel the power down by pressing the attention button again.
3. Wait for the slot to power down (green power LED will turn off).
4. Open the MRL.
5. Add the PCI card to the slot.
6. Close the MRL.
7. Press the attention button of the slot. The power LED will again blink for 5 seconds. While the power LED is blinking, you may abort the request by pressing the attention button.

   Windows loads and starts the drivers for all functions of the device or prompts the user to install the driver(s) for the new card.

   The device driver begins using the device normally.
8. Check the device manager for the device just installed. If the device is not present, the addition failed.

Hardware Interface for the HP Integrity Superdome

1. Locate an empty slot. The user must note the Cabinet number, I/O Bay number, I/O Chassis number, and the PCI slot number. All are marked on the Cabinet and/or I/O Chassis.
2. Insert the card into the slot. Power should be off on all unused slots but check power LED before making the insertion.
3. From the MP command window type **pciolad**. You will see the following:

This command initiates the activation or deactivation of a PCI card.

Note : Activate is equivalent to Add/Insert, and

Deactivate is equivalent to Remove/Eject

Do you want to Activate or Deactivate a PCI card (A,D) : a

Enter cabinet number: w

Enter IO bay number: x

Enter IO chassis number: y

Enter PCI slot number: z

Activate PCI card in Cabinet w, IO Bay x, IO Chassis y, PCI Slot z? (Y/[N]) y

Request to Activate PCI card sent to system. Check slot power LED.

MP:CM>

4. Check that the slot power LED, found by looking down through top of chassis, is solidly on indicating the slot is powered. If the green LED is not on solidly, the power to the slot is not on and the addition of the card failed.
5. Check the device manager for the device just installed. If the device is not present, the addition failed.

Software Interface

This is not supported because Windows cannot perform a GUI initiated addition. It has neither the GUI nor the interface to the firmware to be able to initiate a hot-plug addition from the OS. Microsoft's official position on this is, "Make sure you implement doorbells and latches."

Hot-Plug Deletion

This section describes how to perform a hot-plug deletion on a Windows Server 2003.

Hardware Interface

1. Locate the slot of PCI card to delete.
2. Press the attention button for the slot. The power LED will begin flashing. During the 5 seconds that the power LED is flashing, you may abort the request by pressing the attention button.

   When the green LED stops blinking and goes off it is safe to remove the card. (If the user removes the card before notification (LED turns off), a machine check alert (MCA) will occur).
3. Open the MRL.
4. Remove the card.
5. Close the MRL.

Hardware Interface for the HP Integrity Superdome

1. Locate slot with card to delete. The user must note the Cabinet number, I/O Bay number, I/O Chassis number, and the PCI slot number. All are marked on the Cabinet and/or I/O Chassis.
2. From the MP command window type **pciolad**. You will see the following:
   This command initiates the activation or deactivation of a PCI card.
   Note : Activate is equivalent to Add/Insert, and
   Deactivate is equivalent to Remove/Eject

   Do you want to Activate or Deactivate a PCI card (A,D) : d

   Enter cabinet number: w
   Enter IO bay number: x
   Enter IO chassis number: y
   Enter PCI slot number: z

   Deactivate PCI card in Cabinet w, IO Bay x, IO Chassis y, PCI Slot z? (Y/[N]) y

   Request to Deactivate PCI card sent to system. Check slot power LED.

   MP:CM>
3. Check that the slot power LED, found by looking down through top of chassis, is off indicating the slot is not powered. If the green LED is not off, the power to the slot is not off and the deletion of the card failed.
4. Remove the card.

NOTE: The preferred method for Integrity Superdome Hot-Plug deletion is through the Windows interface.

Software Interface

1. Request Windows to remove the hardware using the Safely Remove Hardware launch icon in the bottom right corner of the screen.

   Windows notifies the user when it is safe to remove the card. (If the user removes the card before notification by Windows that it is safe, an MCA will occur.)
2. Open the MRL.
3. Remove the card.
4. Close the MRL.

Software Interface for the HP Integrity Superdome

1. Request Windows to remove the hardware using the Safely Remove Hardware launch icon in the bottom right corner of the screen.

   Windows notifies the user when it is safe to remove the card. (If the user removes the card before notification by Windows that it is safe, an MCA will occur.)
2. Remove the card.

Trouble shooting tips

If Hot-Plug operation fails on the HP Integrity Superdome and rx8620/rx7620 check that the driver is installed.

1. Bring up device manager and expand the system devices. Right-click **HPCSR OpRegion Driver**. Then click **properties**. Click the **driver** tab. The driver should be version 1.1.0.0, dated 6/5/2003. If not the driver must be updated.
2. Open the **OnlineReference** page on the desktop.
3. Click on **OEM Drivers.**
4. In the **Description** column click **Click on HP (Hotplug) Region Driver**. This starts the Hot Plug driver update.
5. Answer **Yes** to install the driver.